

**REMARKS**

This responds to the Office Action mailed on June 6, 2005.

Claims 1, 5, 7, 11 and 13 are amended, claims 10 is cancelled, and claim 31 has been added. Claims 1-19 and 31 are now pending in this application.

**§102 Rejection of the Claims**

Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by Huang et al. (U.S. 5,719,088). This rejection is respectfully traversed.

Claim 1 includes “applying an AlN passivation layer to the top surface of the heterojunction channel field effect transistor to reduce uncontrolled changing of charge states.”, as amended. The Examiner suggests that Huang et al. discloses an AlN passivation layer when they describe AlN layer 25. Applicant respectfully disagrees.

A passivation layer, as used in the present application, alters the electronic properties of the surface of the transistor. The function of the AlN passivation layer is to stop the uncontrolled changing of charge states at the surface during the operation of the transistor. These charge states may be due to dangling bonds, impurities, or other defects. The surface states are being controlled by this layer to be electronically passive, in contrast to being uncontrollably active. The claim has been amended to characterize the passivation layer as providing a function that is quite different from layer 25 in Huang et al. As such, claim 1 clearly recites a different structure, and the rejection should be withdrawn.

Huang et al. indicates that layer 25 is AlN, but this is never used as a passivation layer, it is only used as an etch stop layer in an intermediate processing step. As such, it is a process tool. No other functions are ascribed to it. In fact, Huang et al. indicate specifically that silicon nitride layer 22 is the passivation layer in Column 3, lines 5-15. This teaches away from having AlN function as a passivation layer. There is no stated reason to have two passivation layers. Huang et al., also mentions a passivating film 35 that is formed at the same time that layer 22 is etched. Col. 4, lines 20-34. Thus, Huang et al. clearly distinguish an insulating layer or etch stop layer from a passivating layer. The AlN layer of Huang et al. is clearly not a passivating layer as claimed, and quite clearly, does not provide the function claimed.

Since the passivation layer in the presently claimed invention was continuously characterized as providing this function, no new limitation is believed to have been introduced, and the claim is not believed to have been narrowed. This amendment is also not believed to necessitate the need for a new search.

*§103 Rejection of the Claims*

Claims 2, 5 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Huang in view of Yoshida (U.S. 6,281,099). This rejection is respectfully traversed.

Since claim 2 depends from claim 1, it is believed to distinguish the references for at least the same reasons as claim 1 and should be allowable. Claim 5 has been amended in a manner similar to claim 1, and along with dependent claim 9, is believed to distinguish the references for at least the same reasons.

Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Huang in view of Parmenter et al. (U.S. 5,026,454). This rejection is respectfully traversed.

Since claims 3 and 4 depend from claim 1, they are believed to distinguish the references for at least the same reasons as claim 1 and should be allowable.

Claims 6-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Huang in view of Yoshida as applied to claims 2, 5 and 9 above, and further in view of Parmenter. Claims 6-8 depend from claim 5 and are believed to distinguish the references for at least the same reasons as claim 5.

Claims 11-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Utumi in view of Parmenter and Yoshida. This rejection is respectfully traversed.

Claim 11 has been amended in a manner similar to claims 1 and 5, and should be allowable for at least the same reasons, as should dependent claims 12-15.

*Allowable Subject Matter*

Claims 17-19 were allowed.

Claims 10 and 16 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 10 has been cancelled and rewritten as new claim 31.

**CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 373-6972 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.


Respectfully submitted,

WILLIAM J. SCHAFF ET AL.

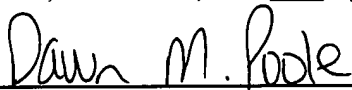
By their Representatives,

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Date 10/3/2005

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**CERTIFICATE UNDER 37 CFR 1.8:** The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 3<sup>rd</sup> day of October, 2005.



Name



Signature